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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/526,105 | 07/22/2005 | Atsushi Saitoh | 36856.1327 | 2716 |
| 54066 | 7590 | 10/16/2006 | EXAMINER | |
| MURATA MANUFACTURING COMPANY, LTD. C/O KEATING & BENNETT, LLP 8180 GREENSBORO DRIVE SUITE 850 MCLEAN, VA 22102 | | | LEE, BENNY T | |
| | | ART UNIT | PAPER NUMBER | 2817 |
| DATE MAILED: 10/16/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/526,105 | SAITO, ATSUSHI | |
| | Examiner | Art Unit | |
| | Benny Lee | 2817 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 February 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 12-22 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 12-14, 16, 17 and 19 is/are rejected.
 7) Claim(s) 15, 18 and 20-22 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 February 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

The disclosure is objected to because of the following informalities: In paragraphs [0007] & [0034], note that reference to “aluminum” (i.e. a metal) as a “ceramic substrate” is inappropriate. Should “aluminum” properly be --alumina--? In paragraph [0019], note that --1-- should precede “(C)” for clarity of description. In paragraph [0020], note that --2-- should precede “(D)” for clarity of description. In paragraph [0024], note that --6-- should precede “(C)” for clarity of description. In paragraph [0025], note that --7-- should precede “(D)” for clarity of description. In paragraph [0032], note that the reference labels therein should reference --Fig. 2(A)-- or --Fig. 2(D)-- in which they actually appear, as to provide consistency in description with the corresponding drawing figure. In paragraphs [0033], [0039], [0062], [0065]: note that “plane E” should be rewritten as --E plane-- for a proper characterization. In paragraph [0035], note that the reference labels therein should reference --Fig. 2(B)-- or --Fig. 2(C)-- in which they actually appear, as to provide consistency in description. In paragraph [0036], note that --[Fig. 2(C)]-- should follow “4g” for consistency of description with the corresponding drawing figure. In paragraphs [0044] to [0051], note that the specific dimensions recited therein should reference the corresponding figure in which they appear (e.g. “Hg” should reference --Fig. 1(A)--, etc) for consistency of description with the corresponding drawing figure. In paragraph [0052], note that --(Fig. 4)-- should follow “Ld” for consistency of description with the drawing figure. In paragraph [0060], note that the reference labels therein should reference --Fig. 7(A)-- or --Fig. 7(D)-- in which they actually appear, as to provide consistency in description with the corresponding drawing figure. In paragraph [0063], note that the reference labels therein should reference --Fig. 7(B)-- or --Fig. 7(C)-- in which they actually appear, as to provide consistency in

description. In paragraph [0064], note that “FIG. 2(B)” should be rewritten as --FIG. 7(B)-- for a proper characterization. Appropriate correction is required.

The drawings are objected to because in Figs. 2B & 2C, note that reference labels --V-- need to be provided such as to be consistent with the specification description of those drawing figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims 14, 16, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, note that reference to “the transmission line” per se lacks strict antecedent basis.

In claim 16, note that reference to “the transmission line part” and “the ground conductor” respectively lack strict antecedent basis.

The following claims have been found to be objectionable for reasons set forth below:

In claims 12, 15, note that “plane E” should be rewritten as --E plane-- for a proper characterization.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12, 13, 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ishikawa et al.

With regard to claims 12 & 17, Ishikawa et al [Figs. 20(A) & 20(B)] discloses a line (i.e. planar transmission line to waveguide) converter comprising: a three dimensional waveguide [e.g. dielectric strips (10, 11) sandwiched between conductive plates (13, 14)]; a dielectric substrate (12) having a plane circuit [e.g. see fig. 20(A)] disposed thereon. As evident from Fig. 20(B), the substrate is oriented in a horizontal plane relative to the waveguide such as to be parallel to the E plane of the waveguide, as would have been known to those of ordinary skill in the art. Moreover, note that the conductive pattern includes a “coupling line portion” [i.e. corresponding to line components (20, 25)], which is positioned adjacent the dielectric strips (10, 11) of the waveguide, such as to be electromagnetically coupled to a signal propagating within

the waveguide, such as to convert the waveguide signal to a signal propagating in the dielectric substrate. Furthermore, note that a “transmission line portion” (i.e. the conductor portion in Fig. 20(A) which leads to a “high frequency circuit module” such as an “IF circuit”) extends away from the “coupling line portion”. Additionally, the dielectric substrate includes a conductor portion defining a “shielded area” [i.e. the ground connection pattern in Fig. 20(A)] which as shown in Fig. 20(B) is electrically connected by conductive structure or projection portion (14') to the conductive plates (13, 14) of the waveguide, such as to provide an electrical short circuit there between. Accordingly, an electrical short circuit inherently would have provided reflections of propagating waves and as such would have resulted in “standing waves” within the “shielded area”, which would have necessarily been coupled to the “coupling line portion” by virtue of its electrical connection to the “shielded area”. With regard to claim 13, since the conductive projection structure (14') electrically contacts both surfaces of the dielectric substrate as shown in Fig 20(B), it must stand to reason that the “conductive ground pattern” of Fig. 20(A) is electrically present with respect to each surface of the dielectric substrate to provide the necessary short circuiting effect provided by the conductive projection structure (14').

Claims 15, 18, 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

B. Lee


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817